REMARKS/ARGUMENTS

Favorable reconsideration of this application, in light of the following discussion, is respectfully requested.

Claims 1-20 are pending in the present application.

In the outstanding Office Action, Claims 1-4, 7-14, and 17-20 were rejected under 35 U.S.C. §102(e) as anticipated by Kim et al. (U.S. Patent Publication No. 2001/0031004, hereinafter Kim); and Claims 5, 6, 15, and 16 were objected to for depending from a rejected base claim, but were otherwise indicated as including allowable subject matter.

Applicant thanks the Examiner for the indication of allowable subject matter. However, these claims have been presently maintained in dependent form because Applicant considers the pending independent claims patentably distinguishing over the applied art.

With respect to the rejection of Claim 1 as anticipated by Kim, Applicant respectfully traverses the rejection. Claim 1 recites, *inter alia*,

> calculating respective vector differences between a primary set of motion vectors associated with a first number of blocks adjacent to the target block and one or more of a secondary set of motion vectors respectively associated with a second number of blocks also adjacent to the target block; and
>
> selecting a motion vector among said primary set of motion vectors corresponding to a smallest one of said vector differences or to a smallest sum of vector differences associated with the respective motion vectors of said primary set as the motion vector prediction.

Kim does not disclose or suggest these elements of Claim 1.

Conventionally, e.g. in the coding standard H.263 and MPEG 4, three adjacent blocks are used to derive a prediction motion vector. Each component of the vector (horizontal and vertical) is derived separately by selecting the respective median of the components of the three vectors. However, the prediction vector derived in this manner is not sufficiently accurate. In addition, by selecting the prediction vector on a component by component basis,

the vector may be constructed of components from different vectors resulting in a "fictional" motion vector.

Non-limiting embodiments of the claimed invention select a "true" motion vector associated with one of a first set of adjacent blocks. The selection is determined by comparing the motion vectors of a first set of adjacent blocks with the motion vectors of a second set of adjacent blocks. The motion vector of the first set of adjacent blocks having the least difference compared to the motion vectors of the second set of adjacent blocks is selected to be the motion vector prediction for the target block.

One non-limiting embodiment of the claimed invention includes only two candidate motion vectors (vectors a and b) of two predefined adjacent blocks, and one guiding vector (vector c) of a predefined third adjacent block. The candidate vector having the least difference compared to the guiding vector is then selected as the vector prediction for the target block.[1]

Kim discloses a method for obtaining the actual motion vector of the current frame in a memory-cost effective way. A motion vector, which is generated with respect to each block, must be stored in a motion vector memory for motion prediction of the next block. According to Kim, the motion vectors of upper blocks are stored in memories on a column basis and updated on a row basis, and motion vectors of left blocks are stored in a separate memory and updated on a macro-block basis. For a frame composed of N macro-blocks in the horizontal direction, only (2N+1) motion vector memories are than said to be sufficient to store all motion vectors necessary to motion prediction, and only three memories per macro-block are said to be sufficient to update motion vectors.

The method described in Kim differs significantly from the claimed invention. First of all, the phrase "vector differences" as used in Kim does not equate to the claimed "vector

[1] *See*, page 4, line 14 to page 5, line 9 of the Specificaiton.

differences." The claimed "vector differences" are differences between motion vectors of adjacent macro-blocks used to determine from which adjacent macro-block to adopt the motion vector as the motion vector prediction of the target macro-block. In contrast, the motion vector difference referred to in Kim is a difference between the actual motion vector and the predicted motion vector.[2] Hence, the calculating step of Claim 1 is not disclosed in Kim.

Further, Kim does not disclose or suggest the claimed "selection step." Kim does not disclose or suggest any alternative motion vectors to choose from when determining the motion vector prediction. In fact, it is stated in paragraph [0050] of Kim that the obtaining of a predicted motion vector is not limited to a particular method, because Kim only addresses the problem of memory consumption when decoding/coding motion vectors, and not the determining of the motion vector prediction.

Further, the only method of obtaining a predicted motion vector described in Kim involves determining the median value of motion vectors of three macroblocks.[3]

The outstanding Office Action cites to paragraph [0060] of Kim as disclosing the claimed "selecting step." However, paragraph [0060] of Kim does not disclose or suggest any selecting, let alone the claimed "selecting a motion vector among said primary set of motion vectors corresponding to a smallest one of said vector differences or to a smallest sum of vector differences associated with the respective motion vectors of said primary set as the motion vector prediction." The motion vector prediction method described in paragraph [0060] only discloses: determining whether the macroblock has been motion prediction-encoded; determining whether the block is in 8x8 mode; and if the block is in 8x8 mode, then storing motion vectors in memory.

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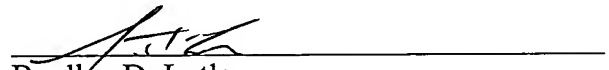
[2] Kim, paragraph [0042].
[3] Kim, paragraph [0010], and paragraph [0050] equation 1.

In view of the above-noted distinctions, Applicant respectfully submits that Claim 1 (and Claims 2-10 dependent thereon) patentably distinguish over Kim. Independent Claim 11, although of a different statutory class, recites elements analogous to Claim 1. Thus, Applicant respectfully submits that Claim 11 (and Claims 12-20 dependent thereon) patentably distinguish over Kim.

Consequently, in light of the above discussion and in view of the present amendment, the present application is believed to be in condition for allowance and an early and favorable action to that effect is respectfully requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Bradley D. Lytle
Attorney of Record
Registration No. 40,073

Joseph Wrkich
Registration No. 53,796

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)

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